WHAT IS CLAIMED IS:

1. A process for removing a reduced sulfur gas from a process stream, said process comprising contacting the process stream with a reduced sulfur gas sorbing composition comprising, in the same particle, zinc titanate and a metal oxide-aluminate phase in order to remove at least a portion of the reduced sulfur gas from the process stream.

2 The process according to claim 1, wherein the metal oxide-aluminate phase of the sulfur sorbing composition has the general formula MO, wherein M is a metal selected from the group consisting of magnesium, zinc, nickel and calcium, and O is oxygen.

3. The process according to claim 1, wherein the metal oxide-aluminate phase is zinc oxide-aluminate.

4. The process according to claim 1, wherein the metal oxide-aluminate phase is calcium oxide-aluminate.

5. The process according to claim 1, wherein the metal oxide-aluminate phase is magnesium oxide-aluminate.

6. The process according to claim 1, wherein the reduced sulfur gas sorbing composition, after sorption of a reduced sulfur gas, is contacted with an oxygen-containing gas at an elevated temperature in order to desorb a reduced sulfur gas and thereby regenerate the reduced sulfur gas sorbing composition for subsequent reduced sulfur gas sorption duty.

7. The process according to claim 1, wherein the composition further comprises a binder material.

8. The process according to claim 1, wherein the composition is in the form of microspheroidal particles.

9. The process according to claim 1, wherein the composition is constantly recirculated in a fluid bed reactor to effect sorption of the reduced sulfur gas.

10. The process according to claim 1, further comprising regeneration of the composition by extracting a portion of partially sorbed particles and subjecting said particles to regeneration.

11. The process according to claim 1, further comprising regeneration of the composition by ceasing a gas flow in said process and then subjecting the sorbent to a regeneration process.

12. The process according to claim 1, wherein a reduced sulfur gas is removed from a coal gas stream.

13. The process according to claim 1, wherein a reduced sulfur gas is removed from a hydrocarbon gas stream.

14. A process for removing a reduced sulfur species from a process stream, comprising:

(a) providing an attrition-resistant particulate sorbent comprising a plurality of substantially uniform particles comprising a zinc titanate phase and a zinc oxide-aluminate phase, said zinc titanate phase being present in an amount of from about 5 w.% to about 80 w.% of said particles, said zinc oxide-aluminate phase being present in an amount of from about 20 w.% to about 95 w.% of said particles, said zinc titanate and zinc oxide-aluminate phases constituting at least about 80 w.% of said particles, and said particles being substantially free of unreacted alumina; and

(b) contacting the process stream with said particulate sorbent under conditions sufficient to cause sorption of sulfur by said particulate sorbent.

15. The process according to claim 14, further comprising: contacting the particulate sorbent with an oxygen-containing gas at an elevated temperature after sorption of sulfur to remove sulfur, thereby regenerating the particulate sorbent for subsequent sorption duty.

16. The process according to claim 15, wherein the steps of contacting the process stream with said particulate sorbent and contacting the particulate sorbent with the oxygen-containing gas are each conducted in a fluid bed reactor.

17. The process according to claim 16, wherein the particulate sorbent is recirculated from the step of contacting the particulate sorbent with the oxygen-containing gas to the step of contacting the process stream with said particulate sorbent.

18. The process according to any one of claims 14, 16 or 17, wherein said process stream is a coal gas stream.

19. The process according to any one of claims 14, 16 or 17, wherein said process stream is a hydrocarbon gas stream.

20. A method of stabilizing an unreacted alumina support so as to be chemically nonreactive with zinc atoms from a zinc-containing compound comprising a reduced sulfur sorbent composition, said method comprising: chemically reacting a metal oxide with alumina to form a metal oxide-aluminate phase material under elevated temperature conditions, said metal oxide-aluminate phase-forming chemical reaction reducing or eliminating deactivation of the zinc-containing compound comprising the reduced sulfur sorbent composition at the elevated temperature.

21. The method according to claim 20, wherein the metal oxide comprises a divalent metal.

22. The method according to claim 21, wherein the divalent metal is selected from magnesium, calcium, zinc, or nickel.

23. The method according to claim 20, wherein the alumina support comprises an alumina binder.

24. The method according to claim 20, wherein the zinc containing compound is zinc titanate.

25. The method according to claim 24, wherein the reduced sulfur sorbent composition comprises from about 5 w.% to about 80 w.% zinc titanate and from about 20 w.% to about 95 w.% of the metal oxide-aluminate phase.

26. The method according to claim 25, wherein the zinc titanate and the metal oxide-aluminate phase comprise the same particle.

27. The method according to claim 26, wherein the particle comprises a microspheroidal particle.

28. The method according to claim 20, wherein the temperature is greater than about 300°C.